



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/402,185	03/25/2002	Karl-Erik Knipstrom	C36305	6575
7590	04/01/2005			
EXAMINER				
STONER, KILEY SHAWN				
ART UNIT		PAPER NUMBER		
1725				

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/402,185	KNIPSTROM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kiley Stoner	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 September 2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 3-7 and 9-31 is/are allowed.
- 6) Claim(s) 1,2,8 and 32-37 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____.   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

**DETAILED ACTION**

Examiner McHenry has left the Patent Office. Kiley Stoner will now be examining this application.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 32-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly added limitation of "the welding operation is considered to be the instant when the welding probe is inserted into the joint".

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Spinella et al. (5,829,664). Spinella et al. teaches workpieces to be welded are positioned on a work-table and by means of clamping device clamped to one another and/or to the work-table and according to which a rotating welding means is arranged to move along a joint between the workpieces while being pressed against said workpieces during the welding, wherein additional heat is supplied to the joint prior to and/or during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means (Figures; column 1, lines 10-67; column 2, lines 20-21 and 42-49 and column 3, lines 16-29); and a work-table supporting workpieces to be welded, at least one clamping device for clamping the workpieces to one another and/or to the work-table, and a welding means adapted to be advanced along a joint between the workpieces while being pressed against said workpieces during the welding, and a heating element for supply of additional heat to the joint prior to and/or during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means (Figures; column 1, lines 10-67; column 2, lines 20-21 and 42-49 and column 3, lines 16-29).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spinella et al. (5,829,664). Spinella et al. teaches preheating the joint, but fails to teach pre-heating the joint to a maximum of 250C below the fusion temperature of the material of the joint. At the time of the invention it would have been obvious to one of ordinary skill in the art to pre-heat the joint to a maximum of 250C below the fusion temperature of the material of the joint, so that the workpieces are softened without melting the workpieces. This would allow the workpieces to still be friction stir welded with an increased travel speed.

***Allowable Subject Matter***

Claims 3-7 and 9-31 are allowed.

Claims 32-37 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action.

***Response to Arguments***

Applicant's arguments filed 9-28-04 have been fully considered but they are not persuasive. The applicant argues that Spinella et al. does not teach "wherein additional

heat is supplied to the joint prior to and/or during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means". The examiner believes that the broadness of this language, particularly the "supplied" limitation reads on the teachings of Spinella et al. The applicant is attempting to claim that the additional heat is supplied by a means other than the welding means.

Spinella et al. teaches :

"Electrical current can flow directly through the tool, pin and workpiece into a metal table supporting the workpiece below the location of the tool and pin, or electrical current can be applied by an electrode engaging the workpieces either ahead of or behind the stir tool, with current flowing linearly through the workpiece between the electrode and tool" (column 1, lines 39-45). So, the heat can be applied/supplied by either the pin or the electrode. If the current is supplied by the electrode it reads on claims 1 and 8.

"Current can flow in either direction or can alternate if AC power source is used" (column 2, lines 20-21). This means that the current can be supplied by either the pin or the electrode and either the pin or the electrode can be focused with resistive heat.

The applicant states that "the electrode 30 is necessary to supply the heat because it closes the current path, which is essential to get extra heat at the pin location". When the current direction is changed, the additional heat is directed to the electrode location.

"In a second embodiment of the invention (FIG. 2), electrically resistive heat is supplied by an electrode 30 engaging the workpieces 14 either before or after the stir tool 12 (as shown) or after the tool (not shown)" (column 3, lines 16-29). This clearly teaches that the current is supplied by the electrode, not the pin. This teaching meets the limitations of claims 1 and 8.

Claim 7 of 5,829,664 reinforces the fact that the current is supplied by the roller/wheel to the pin. The current between the electrodes inherently heats the workpieces

Just because the pin is part of the current loop does not mean that the current is supplied from the pin. Clearly the current can be supplied from the pin or roller, and does not have to be supplied by the welding means (pin).

### ***Conclusion***

The prior art of record that is cited as of interest is presented on the form-892. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiley Stoner whose telephone number is (571) 272-1183. The examiner can normally be reached on Monday-Thursday (7:30 a.m. to 6:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on Monday-Friday at (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KILEY S. STONER  
PRIMARY EXAMINER

*Kiley Stoner* 3/29/05